

ABSTRACT OF THE DISCLOSURE

The present invention relates to a heating plate crystallization method used in the crystallization process for the poly-silicon thin-film transistor, and more particularly, the present invention relates to a heating plate crystallization method by using a pulsed rapid thermal annealing process (PRTP). By means of the characteristic provided by the present invention, namely, the heating plate area has a better absorption rate to the infrared rays and has a high thermal stability. The heating plate area is used for absorbing the infrared rays, and after the heating, the energy is indirectly transferred to the amorphous layer via a thermal conduction method so that the amorphous layer will be rapidly crystallized to form the poly-silicon. Furthermore, the present invention uses the pulsed rapid thermal annealing process (PRTP), using the infrared rays to instantly heat, to selectively heat the materials by taking the advantage that different materials have different absorption rates to the infrared

rays. However, the glass substrate and the amorphous cannot effectively absorb the infrared rays so that the glass substrate will not be broken while the process temperature
5 of the heating plate area is excessively high ($> 700^{\circ}\text{C}$). Therefore, the most effective rapid thermal crystallization can be achieved.